

Female Students' Perceptions of Digital Platforms at the University of Dar es Salaam, Tanzania

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ABSTRACT

Engagement with the digital world and the utilization of digital platforms enhance teaching and learning in higher education institutions (HEIs) by providing interactive resources, fostering collaboration, enabling real-time feedback, and expanding access to diverse educational materials. Accordingly, this article explores students' perceptions of digital platforms at the University of Dar es Salaam, Tanzania. It presents findings from a qualitative study that used unstructured interviews to gather information from five colleges within the university. Students perceived that access to digital platforms was influenced by knowledge and exposure to the platforms, ease of use, and the platforms' perceived usefulness. Ownership of digital devices such as smartphones and laptops was seen as a catalyst for accessing these platforms, but also a basis for marginalisation. Students in science and/or information and communication technology programmes (the majority being male) were more likely to access learning platforms than those in other disciplines. Therefore, the article advocates for the adoption of a smart campus model. This model should aim to transform traditional educational strategies to ensure that both male and female students gain knowledge of, access to, and understanding of various digital platforms.

Keywords: *Digital platforms; students' perceptions; gender equality; University of Dar es Salaam*

INTRODUCTION

As digital tools in educational institutions support teaching and learning (Sorbara, 2021; Gyawali & Mehndroo, 2024), equitable participation in the digital world is a priority for sustainable and inclusive development (UN, 2019; Picot & Spath, 2020; Gyawali & Mehndroo, 2024). These tools are not only empowering but are also essential for promoting gender equality and bridging the digital gender divide (McKinsey & Company, 2018; Brusevich et al., 2019). However, digital technology mirrors existing power relations in society and is not gender-neutral (O'Donnell & Sweetman, 2018). Since digital technology reflects social power dynamics, it can reinforce inequalities rather than mitigate them. Consequently, digital platforms often replicate gendered power structures, influencing access, participation, and representation in digital spaces (O'Donnell & Sweetman, 2018).

As a result, males and females—both generally and within educational institutions—experience digital access differently, as shown in an earlier study (Sullivan, 2001), partly due to gender socialization. This socialization shapes how male and female learners behave in educational environments. Females tend to participate less actively and are less assertive, while males are typically more outspoken and confident due to traditional gender roles. In patriarchal societies, females are often expected to be more reserved than males (Perkowski, 2013). To achieve gender

equality, deliberate efforts to enhance equitable access and usage are necessary. Without targeted strategies to promote gender-equitable access, the potential benefits of digital tools will remain inaccessible to many.

In this context, research has explored how inclusive digital access can ensure that no one is left behind in teaching, learning, research, and innovation. Evidence has shown that women often struggle and remain behind due to structural and institutional barriers (McKinsey & Company, 2018). Lack of access to digital platforms exacerbates inequality, making it difficult to achieve the Sustainable Development Goals (SDGs) of gender equality SDG 5), and reduced inequalities (SDG 10), and in doing so, subject women and girls to systemic poverty (SDG 1) and socioeconomic marginalisation (SDG 10).

Access to digital platforms depends on several factors, including the availability and affordability of the Internet, sufficient bandwidth, power stability (such as, load shedding), the availability of digital devices, and user motivation regarding the usability and simplicity of digital platforms (Chan, 2023; Gyawali & Mehndroo, 2024; Kisanjara & Maguya, 2024). Globally, there is an unequal distribution in Internet access. The digital divide varies by geographical location, gender, age, race, and educational status (McKinsey & Company, 2018; Gyawali & Mehndroo, 2024). Africa lags behind other regions in Internet access: only 22 percent of the continent's population is connected, compared to 80 percent in Europe, 68 percent in Russia and Central Asia, 66 percent in the Americas, 44 percent in Asia and the Pacific, and 44 percent in the Arab States (Cruz, 2024).

PROBLEM STATEMENT

Studies have shown that digital platforms have increasingly become an integral part of learning and teaching in higher education institutions. As a result, the University of Dar es Salaam has established digital platforms and revised curricula to accommodate e-learning and teaching, aiming to optimize the use of such platforms. However, what remains unclear is how students perceive access to these digital platforms - such as the Learning Management System (LMS), E-Campus, and the Online Library - in terms of usability, availability, and effectiveness in academic settings. Specifically, students perceived ease of use and perceived usefulness of digital platforms in learning and teaching may influence their academic experience and performance, either positively or negatively. These two factors play a pivotal role in fostering access to and utilization of digital technologies.

GENERAL OBJECTIVE

The general objective of this study is to explore female students' perceptions of digital platforms at the University of Dar es Salaam in Tanzania.

SPECIFIC OBJECTIVES

Specifically, the study seeks to:

1. Explore female students' perceptions of the benefits of digital platforms in learning and teaching.
2. Examine female students' perceptions of the usefulness of digital platforms in learning and teaching.
3. Assess female students' perceptions of the ease of use of digital platforms.

STUDY SCOPE

This qualitative study will focus on female students at the University of Dar es Salaam, Mwalimu Nyerere Mlimani Campus, located in the Dar es Salaam Region, Tanzania

LITERATURE REVIEW

Students' perceptions of online learning and teaching are connected to issues of effectiveness, usability, and usefulness (Chauhan & Thakur, 2023; Chan, 2023; Gyawali & Mehndroo, 2024). For instance, Chan (2023) associated students' use of digital learning platforms with enjoyment. In this regard, the more students found the platform enjoyable, the more likely they were to use it, and vice versa. Contrary to Chan (ibid.), Chauhan & Thakur (2023) also linked usage to the competency of both learners and teachers, as well as the availability of space and opportunity to use digital learning platforms.

Additionally, access to information and communication technology (ICT) tools is both empowering and essential in the Fourth Industrial Revolution (McKinsey & Company, 2019; Picot & Spath, 2020), while the lack of such access can be detrimental to one's ability to learn and perform effectively (Chauhan & Thakur, 2023). Chauhan & Thakur discussed Google Meet, Microsoft Teams, Zoom, and webinar classrooms as modern digital approaches that higher learning institutions increasingly use, alongside online education platforms such as Google Classroom, Learning Management Systems (LMS), and Massive Open Online Courses (MOOCs), which have become common in higher education (Chauhan & Thakur, 2023; Gyawali & Mehndroo, 2024). Gyawali & Mehndroo (2024) highlighted the transformation of conventional educational paradigms, improved access to learning materials, and the preparation of students for a digitized future as some of the advantages of adopting digital platforms in teaching and learning.

Despite the verifiable benefits of digital learning platforms, some students have perceived them negatively. A study by Kisanjara & Maguya (2024) found that many Mzumbe University students in Tanzania were wary of the e-learning platforms introduced by their institution. These negative perceptions were linked to an inadequate e-learning support environment, including poor infrastructure, limited technological support, weak Internet connectivity, low-quality LMS materials and content, a lack of proper e-learning user training, and slow system performance (Kisanjara & Maguya, 2024).

Studies have also linked digital tools to enhanced productivity, improved network connectivity, and better access to information on health, education, markets, and social capital (Arntz et al., 2016; McKinsey & Company, 2019; Bessen, 2017). Yet, access to digital tools is largely limited to individuals who possess the skills and resources to use them (McKinsey & Company, 2018), which often excludes a significant portion of the population, including many women (ibid.). Several studies have associated women's limited access to digital tools with systemic inequality and early-life stereotypes, which result in a lack of education and professional training in ICT-related fields (Erkin, 2015). Consequently, women are often employed in roles with limited access to technology and lower income potential (Fitzgerald et al., 1995), a phenomenon similar to what the UN (2013) report titled *"Women in the Digital Economy: Breaking through the Equal Threshold"* referred to as "occupational segregation."

The question of whether gender influences access to and use of digital technologies remains contentious. Some scholars argue that gender does not significantly impact technology use, as both males and females are capable of applying digital tools (Gay et al., 2006). However, other studies report a persistent gender digital divide, reflecting the systemic inequalities that exist

between men and women. These inequalities hinder women's equitable access to digital technologies and information (Fitzgerald et al., 1995; Bessen, 2017; Arntz et al., 2017). Marginalisation of women in the use of ICT tools has weakened their ability to combat poverty and has contributed to the vicious cycle of poverty and the digital divide (UN, 2019; Picot & Spath, 2020). The current challenge is that women lag behind in terms of access to and utilization of digital tools, limiting their opportunities and access to resources (Brussevich et al., 2019).

General Beneficiaries and Scientific Significance

The overall significance of this research lies in the need to expand knowledge about the gender digital divide both within and beyond the University of Dar es Salaam. The World Bank (WB) report (2022) on Tanzania indicates a decline in gender inequality; however, the level of gender inequality across various spheres of life remains a challenge in the country, as highlighted in SDG 5 and SDG 10. The gender digital divide can also affect women's access to decent work, thereby hindering their economic growth, as outlined in SDG 8. These challenges are often rooted in systemic inequalities within foundational institutions, such as educational institutions, which limit girls' and young women's access to quality education—particularly in STEM-related fields (see SDG 5).

Therefore, this study identifies a justifiable need to further examine students' perceptions and access to digital tools as essential resources for economic and career development. Importantly, the Tanzania Development Vision (TDV) 2025 explicitly emphasizes the commitment to eradicating all forms of gender inequality. A similar commitment is evident at the University of Dar es Salaam, whose efforts toward gender equality are outlined in the UDSM Gender Policy (2006, revised in 2022).

Nevertheless, these policy instruments have not explicitly addressed the gender digital divide as a key area of concern. Prioritizing gender digital equality as a component of overall gender equality not only empowers women but also positions them at the center of the Fourth Industrial Revolution and inclusive, sustainable development (McKinsey & Company, 2019). This study, therefore, contributes to Tanzania's -particularly UDSM's -efforts toward achieving gender equality, while also addressing a critical knowledge gap regarding the gender digital divide.

METHODS AND MATERIALS

Research Approach

This qualitative study was conducted at the University of Dar es Salaam, Tanzania. Digital learning platforms are a relatively new technology tool introduced at the university. This novelty has resulted in a lack of clear understanding of gendered student perceptions and opinions on these platforms and their accessibility. The use of a qualitative approach provided rich descriptions of female students' perceptions of digital learning platforms.

Study Design

The study employed a phenomenological case study design to generate a comprehensive understanding of the meaning and essence of the lived experiences of female students at the University of Dar es Salaam. This design was chosen because it provides rich and detailed insights into student perceptions of digital platforms. It enabled the authors to gain in-depth understanding of students lived experiences. By focusing on a specific case -the University of Dar es Salaam -the

study explored underlying patterns and dynamics that could have been difficult to ascertain using other research designs.

Study Population

The study involved female students enrolled in various degree programmes at the University of Dar es Salaam. This group was selected based on evidence from prior studies indicating that female students often lag behind their male counterparts in accessing digital platforms. Their perceptions and access provided insights that substantiated the arguments made in this study. The students were in different years of study to capture a variety of lived experiences.

Sample and Sampling

The study employed purposive sampling at three levels. First, the researchers purposively selected the University of Dar es Salaam as the case study -being the oldest and most comprehensive university in Tanzania, and having implemented several digital learning platforms. Second, purposive sampling was used to select five (5) university units: the College of Humanities (CoHU), the College of Social Sciences (CoSS), the College of Natural and Applied Sciences (CoNAS), the School of Journalism and Mass Communication (SJMC), and the School of Education. Finally, purposive sampling was applied to select female students based on their programme and year of study. Students from first to third years were included. First-year students were expected to have lower familiarity with digital platforms, while second- and third-year students were expected to have more experience accessing and using these platforms.

In total, fifteen (15) female students aged between 20 and 32 years participated in the study. Selection was also based on the students' willingness to participate and share their perceptions of digital learning platforms.

Data Collection

Fieldwork for this study began in October 2023. It involved one senior researcher and two junior researchers, assisted by five research assistants. The research assistants were recruited to ensure wide coverage of students across all colleges and schools at the University of Dar es Salaam, located in Dar es Salaam. Data were collected from the fifteen female students using semi-structured interviews.

Data Analysis

The collected data were analysed thematically after the researchers developed major categories and merged them into themes representing the student narratives. The researchers followed Braun and Clarke's (2006) six-step thematic analysis method, which aids in organizing and thoroughly describing qualitative data by identifying, assessing, and reporting patterns. The process involved familiarising with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and finally producing the report. This approach ensured accuracy and structure throughout the data analysis process.

THEORETICAL FRAMEWORK

This article adopts African Womanism Theory and the Technology Acceptance Model (TAM) to examine gender dynamics in access to and utilisation of digital platforms at the University of Dar es Salaam.

African Womanism is a theory introduced through the work of African women such as Ifi Amadiume, Mary Modupe Kolawole, Flora Nwapa, and others in the 1970s. It was developed to address the role of women in their societies and to give women visibility in all aspects of life. The theory is grounded not only in the understanding of women's struggles within patriarchal systems but also in the recognition of their resilience, flexibility, strength, self-sufficiency, perseverance, and invulnerability (Amadiume, 2015; Uimonen, 2020; Johnson, 2023) in navigating systemic and structural injustice and marginalisation.

Gender stereotypes often portray women - especially female students - as marginalised and less capable of engaging with digital technologies and platforms. This discourse misrepresents their lived experiences and voices (Mwaipopo & Ndaluka, 2024). Furthermore, it overlooks diversity and difference (Amadiume, 2015), and tends to depict women as passive agents incapable of adapting to digital materials, web links, or e-learning environments, including the use of ICT.

However, African Womanism Theory alone is not sufficient to fully articulate the complexities of women's marginalisation in emerging technologies. To understand women's resilience and cultural adaptation to digital spaces, this study incorporates a second theoretical lens—the Technology Acceptance Model (TAM).

TAM helps bridge the gap by focusing on students perceived usefulness and perceived ease of use of digital technologies (Holden & Karsh, 2010). The model assumes that individual experiences are shaped by personal, social, and contextual factors, which influence how they interpret, engage with, and respond to digital technologies. These perceptions ultimately affect an individual's attitude toward technology adoption. TAM, therefore, provides a framework to understand the benefits, barriers, and variations in the acceptance and use of digital platforms.

RESULTS

This study examined female students' perceptions of digital platforms used to support learning and teaching at the University of Dar es Salaam, Tanzania. Specifically, it sought to answer the following principal question: *How do female students perceive the available digital platforms, and how do such perceptions affect their access to digital platforms (DP)?*

Female Students' Perceptions

Through a review of the University of Dar es Salaam's policies, strategies, and regulations, the study found a strong commitment to fostering innovation and embracing digital technologies in teaching and learning, as part of the university's drive to become a smart campus. However, it remained unclear whether this technological push aligned with students' actual access to the envisaged digital platforms.

Students' narratives indicated that teaching and learning at the University of Dar es Salaam occur through both physical and online modes. Courses that utilize online platforms are facilitated via the Learning Management System (LMS), a system that enables interactive engagement between instructors and students without face-to-face meetings. The University even obliges instructors to use the platform due to its accessibility from anywhere, without requiring students to attend in-person classes.

The LMS, accessible through the University's website, allows all enrolled students and instructors to participate in online teaching and learning. Nevertheless, students perceived the platform as underutilized. One female student elaborated:

"My opinion is that the University should encourage instructors to use LMS in learning because we are in the digital world. Secondly, some of the classes that take more than 500 students should be run online so that every student can follow. Third, students, especially female students, should be educated on the use of digital technology and how AI can change their learning."

In this regard, the LMS emerged as a potential solution to the challenges associated with large classes, where students often struggle to hear instructors in traditional lecture settings. This statement also calls for the empowerment of female students through digital education, highlighting a gender gap in digital technology usage.

Moreover, it was noted that the University of Dar es Salaam encourages both staff and students to use the LMS for teaching and learning. The system also allows instructors to set tests, assignments, and examinations, process continuous assessments, and provide results to students. One student described the availability of digital platforms as follows:

"They are available depending on the university's requirements. For example, there are certain assignments that require you to log in online to find books. It requires you to use digital devices. Sometimes, you are required to log in to read ARIS [Academic Registration Information System] information, and when selecting rooms for student hostels, you also have to use ARIS."

Nevertheless, the application of LMS in teaching and learning remained largely inadequate, prompting students to call for the integration of systems, including ARIS—which holds each student's academic information related to their studies. In this context, a third-year Bachelor of Social Work female student from the College of Social Sciences (CoSS) suggested:

"There should be links on ARIS for learning/accessing other platforms. For instance, if the LMS/Moodle link were shown on the ARIS platform—which is the main and compulsory platform used by every student—it would be easier for students to learn how to access other university platforms."

Perceptions on the Usefulness of Digital Platforms (DP)

Students' perceptions of the importance of digital platforms in learning and teaching were largely positive. A second-year student pursuing a Bachelor of Education in Early Childhood Education from the School of Education said:

"These are very important. They include receiving information at any time and from anywhere, as is the case with ARIS. They facilitate teaching and learning ... you get learning materials from anywhere. Sometimes, teachers use LMS to evaluate [examine] students."

A third-year female Philosophy student from the College of Humanities, Department of Philosophy and Religious Studies, stated:

"Digital platforms are useful in ensuring a smooth flow of information from instructors to students and in facilitating the sharing of information between and among students. For example, ARIS-3 helps students see their results, allocates hostel rooms, and facilitates the payment of university fees. In short, it is a very helpful system."

Another student added:

"It has helped ensure the privacy of students' information. For example, with ARIS, students' results are kept confidential."

Previously, results were posted on notice boards where all students could access them, however they were listed using student numbers rather than names.

Female students also perceived that the university's digital platforms, such as the LMS, worked more effectively when supplemented with other social platforms like WhatsApp, Facebook, YouTube, and e-Campus. Social platforms and other digital tools used for teaching, such as Zoom and Google Meet, were also perceived positively. A female student from the College of Humanities majoring in Creative Arts noted:

"Yeah... they are very important. For instance, I am studying music. While at home, I often use videos from YouTube to learn about different aspects taught in class. Also, digital systems such as ARIS-3 are useful in connecting instructors and students."

Additionally, a 32-year-old female third-year student pursuing a Bachelor of Arts in Music from the College of Humanities, and enrolled as a mature student, stated:

"I recommend enhancing digital technology, especially the utilization of online learning for non-practical courses. Online courses will help students with families to meet course requirements while attending to their families. This will also attract many working individuals, especially those seeking a career change."

Moreover, a second-year female Bachelor of Social Work student from CoSS acknowledged that, despite some challenges, the university had made efforts to improve access:

"The University has installed Wi-Fi in all outdoor study areas [known as vimbweta at the university], which helps those who cannot afford internet bundles due to economic hardship to access educational materials and other online platforms. Furthermore, free Wi-Fi is also accessible to registered students in all university libraries as well as their surroundings. These wireless networks are readily available in various academic units and nearby areas such as the UDSM School of Law."

Other female students mentioned using social media platforms such as WhatsApp to receive and share learning materials, as explained by a student from the College of Education:

"I use WhatsApp a lot because it helps me send and receive university information, share and receive pamphlets, and interact with others—for example, by exchanging greetings and social updates via status. We also share experiences with second-year students about life in general. Most of them stay in hostels on campus during their first year, but in their second year, they move off-campus [due to limited availability of hostel slots]. So through WhatsApp status, we exchange opinions with fellow students."

Perceptions on Ease of Use of the Digital Platforms (DP)

On the other hand, students reported difficulties in accessing digital platforms and systems due to several challenges. A third-year Bachelor of Arts in Philosophy student from the College of Humanities stated:

"Anhh! There are many challenges, but mostly the ARIS-3 system is problematic. Although the university offers free WiFi to all students, difficulties arise when too many people are using it at the same time. Then, it takes a long time to download e-books or log in to different e-learning websites, which becomes difficult."

Sometimes, sudden power cuts cause the system to go down temporarily, which is frustrating for students racing against assignment deadlines. Other students cited the high cost of purchasing Internet bundles. As a second-year student pursuing a BSc. in Molecular Biology and Biotechnology from the College of Natural and Applied Sciences explained:

"You know, most of these digital platforms require internet connection, and the price of the bundles is quite high. Therefore, sometimes you have to prioritize your needs to stay within budget... just because you've bought bundles for learning. The price is high, so sometimes buying bundles has to wait in order to meet other pressing needs."

This concern was echoed by a third-year Bachelor of Arts in Mass Communication student from the School of Journalism and Mass Communication:

"Okay, the main issue is the high cost of bundles or credit. This makes it difficult for most people to access digital platforms—even though we have WiFi. When we are at home, it's a big problem. Another issue is a lack of knowledge on how to use these platforms. Most people don't understand their importance. Only a few of us really know what they are and how they help us."

While the university provides free on-campus WiFi, its usefulness is complicated by a lack of remote access once students leave campus. As a result, students must purchase bundles from mobile service providers. Though some students mentioned having access to "Uni-packages," these were considered ad hoc, inadequate, and costly—especially for students reliant on limited funding from the Tanzania Higher Education Loan Board.

In response to this, students recommended a university-wide computer literacy course. As a first-year Social Work student from the College of Social Sciences suggested:

"At least the university should introduce a short computer course for first-year students. It should be compulsory, like other university-wide courses such as Social Science Research, Development Studies, and Communication Skills. This initiative would support students who come from backgrounds where they've never used digital technologies."

The Social Science Research course (coded AS), Development Studies (DS), and Communication Skills (CL) are all compulsory at the University of Dar es Salaam. Students suggested that a similar mandatory course on computer literacy would help bridge the digital divide between those who had prior exposure—mostly from better-resourced private schools—and the vast majority who did not. Other students viewed the university's digital systems as rigid and user-unfriendly. For example, a second-year Bachelor of Social Work student from the College of Social Sciences cited issues with ARIS-3:

"Some features on ARIS don't function—for example, changing passwords or applying for a refund. Sometimes, you want to change your password, but that option isn't available. This compromises privacy. Also, when you've overpaid fees or the Loans Board has paid more than needed, the balance can't be refunded through the system. It becomes a challenge that requires physical follow-up, and reimbursement takes a long time."

Although ARIS-3 is the third iteration of the system, designed to enhance usability, students' experiences show that more improvements are necessary to optimize its benefits.

Fieldwork observations confirmed that the university has installed free WiFi at various points across campus, including each college, libraries, and designated study areas (known as *vimbweta*). In theory, this should enable both students and staff to access and use digital technologies. As one female student from the School of Education noted:

"They are available. For example, free WiFi installation at the University has made it easier for students to access information and use digital devices. The availability of computers in the library and systems that require students to log in for services are added motivations."

Although several colleges have computer labs and additional computers in libraries, students noted that the number of computers was insufficient. The large student population often overwhelms the available resources, and malfunctioning computers are not repaired or replaced in a timely manner. As one student from the School of Education complained:

"Add more computers in labs, for instance in the School of Education (SoED)."

Students also mentioned that the WiFi has limited bandwidth, becoming overloaded when many students connect simultaneously. This leads to delayed access to digital resources. Access to WiFi also requires unique login credentials, which can be restrictive. For instance, the New University Library has a separate login system from the general campus network. Each unit has autonomous credentials, which users must have to access the network. A third-year Bachelor of Education in Adult and Community Development student explained:

"There should be strong WiFi. Also, it shouldn't require passwords. Sometimes our personal bundles are exhausted, and we pass through areas with WiFi but can't access it due to password restrictions. If the university provides WiFi for students and staff, there's no reason for limiting access with so many passwords."

Such restrictions hinder student access to learning platforms and other academic resources. Moreover, some students questioned whether the WiFi could truly be considered "free" if access is restricted and unavailable off-campus, especially for those unable to afford Internet bundles.

Despite the challenges, some students adapted positively. A second-year student from the College of Social Sciences shared:

"Most often, I use two strategies: when I am at the university, I use the university's WiFi; when I'm off-campus, I buy my own bundle to access the internet."

Nevertheless, lack of access to digital devices remained a major issue. A second-year Bachelor of Education in Psychology student explained:

"The main challenge is access to digital devices. Most of us rely on smartphones, but some students don't even own smartphones. This makes it difficult to access and use the platforms. Another challenge is the lack of knowledge about how to use these devices. Most students use them mainly for communication, not for learning. Also, the cost of buying devices like smartphones, laptops, and bundles is a problem. Plus, platforms like WhatsApp are flooded with business ads and other distractions, making students lose interest."

Similarly, a second-year BSc. Molecular Biology and Biotechnology student from the College of Natural and Applied Sciences said:

“My suggestion to the university is to increase the WiFi capacity so it can serve everyone, and also improve the efficiency of ARIS-3.”

Students cited several challenges affecting their use of digital platforms at the University of Dar es Salaam. A first-year Bachelor of Social Work student from the Department of Sociology and Anthropology in the College of Social Sciences summarized:

“The challenge is that most students don’t have smartphones, and they lack knowledge on how to use digital devices. Language—especially English—is also a challenge, particularly for first-years. The lack of money to buy bundles is another major issue.”

How Perceptions Affect Access to DP

From the students' narratives, it was clear that their perceptions affected their access to digital platforms. For example, when students perceived difficulties or complications in accessing the platforms, this negatively affected their ability to use them. Social sciences students, in particular, were not encouraged to use e-campus or other learning platforms. However, this was not the case for natural science and engineering students, who used e-campus and LMS more frequently. A perceived lack of digital literacy, especially among first-year and female students, was also a barrier to effectively accessing and using digital platforms. Students who perceived themselves as more digitally literate were more likely to use the platforms, while those with lower levels of digital literacy were less inclined to do so.

Although students at the University of Dar es Salaam generally treat digital platforms as gender-neutral, female students were still a marginalised group in terms of fully engaging with and using these platforms. Female students were not encouraged to participate actively in the online learning environment.

Additionally, students reported that while digital support for students with disabilities was available at the University of Dar es Salaam, there were challenges with accessing these platforms. Assistive technologies such as screen readers and voice recognition software were limited. Moreover, a lack of digital literacy among students, including those with disabilities, further hindered their ability to use these technologies effectively. Without proper training, students with disabilities were unable to fully access learning materials available on digital platforms. Some students suggested that devices should be subsidized for those in need, to help address the issue of device accessibility, particularly for students who rely on mobile phones for learning and lack access to computers or laptops.

Limited bandwidth and WiFi access were also seen as barriers to accessing digital platforms. Students emphasized the need to strengthen and expand the university's Wi-Fi bandwidth to ensure reliable and fast internet access across campus.

Furthermore, there was a perceived lack of integration between the digital systems at the University of Dar es Salaam. Platforms such as ARIS-3 and LMS were developed as separate systems, meaning students could not access all digital platforms from a single source. This lack of integration hindered the use and accessibility of these platforms. Students suggested that improving the functionality and user-friendliness of these platforms, as well as adding useful features, would enhance the overall learning experience.

DISCUSSION

Students' perceptions of digital platforms at the University of Dar es Salaam can be summed up from three aspects. Firstly, they mentioned the ability and/or knowledge to utilize the digital platforms; the resources which included time and income; and lastly, power and resilience to engage in digital spaces. At face value, these aspects might seem non-gendered, hence the statement, "there is equal access to digital platforms between female and male students." However, the ability to utilize digital platforms depends on one's degree programme. For example, the majority of the female students interviewed mentioned using WhatsApp, which is a social media platform with limited connection to learning and educational resources. In contrast, natural and applied science students, the majority of whom were male, had access to more digital platforms related to learning and teaching, such as e-campus, than female students in social sciences, education, and humanities (Mwaipopo & Ndaluka, 2023). As a result, some female students mentioned engaging with social media digital platforms, such as WhatsApp, which have limited learning value but which they used to exchange materials they had already acquired. As such, they missed out on some tangible benefits that educational digital platforms offer.

Students also noted that the connectivity strength of Wi-Fi points varied across colleges. Some colleges had strong Wi-Fi points, while others had weak ones. Moreover, access to these points was regulated by passwords and the awareness of their existence. Literature has shown that these factors might negatively impact female students, whose mobility is controlled by sociocultural norms and values, requiring women or female students to be more reserved. If the college where female students are enrolled has weak Wi-Fi points, then their access to digital platforms and Internet outlets would remain severely limited. Evidence also indicates that Wi-Fi strength is greater at night, when most students are off-campus. It was observed that it was easier for students to download learning materials and access digital platforms during these non-peak periods, which disadvantaged off-campus students. However, for security and cultural reasons, female students avoid frequenting most of these points at night. If they do, they must be escorted by a male student, which increases the likelihood of sexual harassment and gender violence. On the other hand, male students are usually immune to insecurity and violence, which primarily targets female students when accessing a Wi-Fi point, especially at night.

Nevertheless, female students have managed to navigate these challenges by using their own initiatives, such as buying smartphones and Internet bundles, which allow them to access digital platforms with or without a Wi-Fi connection. However, such access was dependent on the income and economic capabilities of individual female students, as they come from diverse backgrounds, both rich and poor. Consequently, some students, especially those from humble backgrounds, end up excluded from enhanced access to digital platforms. The focus on free and strong Wi-Fi points at all times, is therefore very important to make access to digital platforms more inclusive in the present.

Although not all teaching and learning at the University of Dar es Salaam is conducted using the Learning Management System (LMS), students found this digital method of teaching essential in providing universal access to education. LMS gives students, especially married students, the opportunity to enroll and engage in learning while attending to family matters. Most often, women are restricted from joining full-time learning programmes because of the social roles they are expected to perform in their families. Although women play double roles compared to male students, the use of digital platforms in learning and teaching at the university offers them opportunities that would otherwise be limited if these platforms were unavailable. This aspect aligns with the African Womanism theory, which requires scholars to consider the social context in which women navigate to fit into the academic space. Digital platforms offer many women opportunities to participate in learning in novel ways.

CONCLUSION

The results presented in this article suggest that students at the university under review prefer access to digital platforms because they facilitate teaching and learning, particularly in a resource-poor context where online materials -accessible either through subscription or free-opens otherwise unimaginable doors to knowledge. On the other hand, it also shows how limited access, lack of capacity and understanding for both the learners and students undermined the effective use of academic learning platforms such as LMS, Moodle and the online library. As a result, despite their huge potential, they were rarely applied, contrary to university and students' expectations. Instead, the students had recourse to social media platforms, which they mostly applied in communication and sharing of learning materials, thanks to their access to smartphones and availability of on-campus WiFi. Thus, the University of Dar es Salaam pushes towards the establishment of a smart campus. This effort should address current shortcomings including unreliable access to Internet, lack of free remote access of university resources, lack of awareness, and limited capacity in utilising digital platforms. It should also consider the fact that the current infrastructure and facilities available does not support all learners to readily access digital platforms available both on and off-campus.

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Conflict of Interest

The authors declare that the study was conducted in the absence of any commercial or financial relationships that could constitute a potential conflict of interest.

Data Availability

The data that support the findings of this study are available on request from the corresponding authors.

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